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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/615,019	07/13/2000	George F. Kirkman	PD-990235	3957

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06/06/2002

EXAMINER
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NGUYEN, KHANH V

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 06/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/615,019

Applicant(s)

KIRKMAN, GEORGE F.

Examiner

Khanh V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,8-13 and 15-19 is/are rejected.
- 7) ☒ Claim(s) 7 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling.

There is no language in the specification to support the claimed range.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-6, 8-13, 15-19, are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant admitted PRIOR ART (Fig. 1) in view of Vaughn et al. (5,703,531).

Regarding claims 1, 12, 19, PRIOR ART (Fig. 1) discloses the claimed invention except that pre-distortion network is not located in the high temperature zone.

Vaughn et al. (Fig. 1) disclose a pre-distortion linearizer (20) includes signal divider (22) for dividing a microwave signal into linear and non-linear portions which

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may be read as a pre-distortion network and utilizing traveling wave tube (TWT) to amplify the microwave signal, wherein the output of combiner (38) of pre-distortion linearizer (20) is supplied to an amplifier or other device (not shown) (col. 3, lines 44-46) which may be read as a TWT. Regarding to pre-distortion network operates a high temperature zone, applicant invention stated in page 6, lines 4-6, that pre-distortion network formed of robust components such as PIN diodes that operate in higher temperatures. Vaughn et al. disclose Schottky limiter diode and a PIN diode attenuator. Thus, it is inherently seen the pre-distortion linearizer of Vaughn et al. is capable of operating in a high temperature zone.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the circuit of PRIOR ART to have included a pre-distortion network to operate in high temperature zone, as exemplarily taught by Vaughn et al. Such, as modification would have imparted the advantageous benefit of improved linearity, broad band performance, light weight, compact, and suitable for a range of application (see col. 1, lines 50-65) as taught by Vaughn et al., to PRIOR ART reference, thereby suggesting the obviousness of such a modification.

Regarding claim 2, 11, 18, PRIOR ART (FIG. 1) disclose two RF amplifiers (12 and 16) coupled in series and in a low temperature zone wherein the amplifiers (12 and 16) may be read as a first and second amplifier respectively.

Regarding claim 4, Vaughn et al. (Fig. 1) disclose at least one limiter (34 or 28).

Regarding claim 5, the combining references mentioned above disclose the claimed invention except for the range of 11 to -3dBm. It would have been obvious to

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one having ordinary skill in the art at the time the invention was made to modify the value of components in the pre-distortion network to obtain a desired range, since it has been held that where the general conditions of claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claims 6, 13, Vaughn et al. (Fig. 1) disclose limiter (28) may be read as a first limiter coupled to an attenuator (30) which may be read as a first attenuator and a phase adjust (32) coupled in series with the attenuator (30) may be read as a phase shifter.

Regarding claims 8, 15, Vaughn et al. (Fig. 1) disclose slotline transmission line (26) in parallel with limiter (28), attenuator (30) and phase adjust (32).

Regarding claims 9, 16, Vaughn et al. (Fig. 1) disclose attenuator (36) in slotline transmission line (26) may be read as at third attenuator.

Regarding claims 10, 17, Vaughn et al. (Fig. 1) a limiter (34) may be read as a second limiter coupled in series with attenuator (36).

### ***Allowable Subject Matter***

Claims 7 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 7 and 14 are objected to because none of the prior art disclosed or suggested showing the particular structure and/or operation recited in these claims namely: a pre-distortion network comprises a second attenuator (58) coupled in series with phase shifter (56).

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following U.S. Patent contains teaching of an amplifier having traveling wave-type tube: Eggleston (5,617,059)


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh V. Nguyen whose telephone number is (703) 306-9058. The examiner can normally be reached from 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service at (703) 872-9317.

WON

05/28/02

  
Robert Pascal  
Supervisor Patent Examiner  
Tech. Serv. Center